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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,565	04/10/2001	Kai Y. Eng	205/1	7737
27538	7590	12/03/2004	EXAMINER	
KAPLAN & GILMAN , L.L.P. 900 ROUTE 9 NORTH WOODBIDGE, NJ 07095			VOLPER, THOMAS E	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 12/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. ☒

09/829,565

Applicant(s)

ENG ET AL.

Examiner

Thomas Volper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 19 and 20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6, 8, 9, 15, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Kirby (US 6,647,208).

Regarding claims 1, 2, 8, and 15, Kirby discloses an optical engine (205) for switching signals from inputs to outputs depending upon predetermined provisioning, a packet engine (200) arranged to receive signals from said optical engine and to transmit signals to said optical engine after performing packet switching on said signals, and a processor for determining, in response to at least one characteristic of traffic to the node, whether signals input to said optical engine should be switched directly to an output of said optical engine or first routed through said

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packet engine prior to being switched to an output of the optical engine (see Abstract; col. 8, line 62-67; Figure 2A). Kirby discloses that the determination whether to route traffic from an input to an optical output directly, or through the electrical switch part, i.e. the packet engine, is based on whether the traffic is high capacity or low volume (see Abstract). This meets the limitation of using a percentage of total capacity or predetermined load as the determining characteristic.

Regarding claim 3, Kirby discloses that in order to be switched through the optical switch to an optical output, without being processed in the electric switch, a setting must have already been issued for that particular traffic allowing it to be directly switched through to an optical output (col. 6, lines 16-25).

Regarding claim 4, Kirby shows that the packet engine is arranged to receive data from both said optical engine and from a packet network (see Figure 2A).

Regarding claim 5, Kirby shows an optical switch control processor, which meets the limitation of a single provisioning computer, connected to the packet engine and the optical engine (see Figure 2A).

Regarding claims 6 and 9, Kirby shows that the optical switch comprises at least one multiplexer (260) and at least one demultiplexer (225).

Regarding claims 16, Kirby discloses that a data monitor processor (284) detects when traffic from a source is substantial enough to warrant a direct flow path (col. 7, lines 41-49). As stated above, high capacity traffic is designated as warranting a direct path and represents a percentage of total capacity.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kirby (US 6,647,208) as applied to claims 1-6, 8, 9, 15, and 16 above, and further in view of Milton et al. (US 6,631,018).

Regarding claim 7, Kirby discloses the packet engine receives plural inputs from the optical engine, and that the optical engine receives plural inputs from an optical network and from the packet engine (see Figure 2A). Kirby fails to expressly disclose that the packet engine is configured to receive plural inputs from a non-optical packet network. Milton discloses a system that includes an electronic cross connect for receiving inputs from a non-optical packet network, and for switching these inputs onto an optical network (see Figure 3). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to connect the packet engine of Kirby to inputs from a non-optical packet network. One of ordinary skill in the art would have been motivated to do this to use the invention of Kirby as an add/drop device for providing regional electronic packet switching networks access to much faster long haul optical networks.

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6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kirby (US 6,647,208) as applied to claims 1-6, 8, 9, 15, and 16 above, and further in view of Bala et al. (US 6,335,992).

Regarding claim 10, all of the limitations of claim 10 are met in the above U.S.C. 102(e) rejection except that the optical engine comprises at least one two port device and at least one three port device. Bala discloses an optical cross connect system that comprises a number of NxN optical switches, which meet the limitation of devices as in claim 10 (see Figure 1D). Bala does not expressly disclose at least one two-port device and at least one three-port device. However, it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on Applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to use the optical cross connect system of Bala in the optical switch (220) of Kirby. It also would have been obvious to use at least one two-port device and at least one three-port device in the optical cross connect system. One of ordinary skill in the art would have been motivated to use the optical cross connect system of Bala in order to provide a scalable switching architecture that could handle a large number of inputs and outputs. One of ordinary skill in the art would have been motivated to use at least one two-port

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device and at least one three-port device in order to satisfy the requirements of a particular implementation.

7. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirby (US 6,647,208) in view of Bala et al. (US 6,335,992).

Regarding claims 11-13, Kirby discloses an optical switching device (205) that has first inputs (230) and eight outputs (247) (see Figure 2A). The optical switching device also has second outputs (250) and seventh inputs (245) that are connected to a packet switching network (200). Kirby fails to expressly disclose that the optical switching device is comprised of three crossbar switches wherein the first crossbar switch connects the first inputs to the second inputs, and wherein the third crossbar switch connects the seventh inputs to the eight outputs. Kirby also fails to disclose third outputs and fourth inputs connecting the first crossbar switch to a second crossbar switch, and fifth outputs and sixth inputs connecting the second crossbar switch to the third crossbar switch. Bala discloses an optical cross connect system that comprises three switches wherein outputs from the first switch connect to inputs to the second switch and outputs from the second switch connect to inputs to the third switch (see Figure 1D). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the optical cross connect of Bala in the optical switch (200) of Kirby, wherein the packet switching network of Kirby could be connected to the first and third switches of Bala. One of ordinary skill in the art would have been motivated to use such a configuration in order to reroute traffic designated for electronic switching from the inputs of the optical switching device (205) to the

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electronic switching network (200) and back to the output ports of the optical switching device (205).

Regarding claim 14, Bala discloses that the optical switches may employ two-dimensional microelectromechanical systems (MEMS) switches, and that a two-dimensional MEMS switch may include an NxN array of moveable mirrors (col. 13, lines 1-9).

8. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bala et al. (US 6,335,992).

Regarding claims 17 and 18, Bala discloses an optical cross connect system that comprises a number of NxN optical switches (see Figure 1D). This optical cross connect system meets the limitation of a first cross bar switch receiving plural inputs from a second cross bar switch and transmitting plural outputs to a third cross bar switch. Bala fails to expressly disclose that the second cross bar has the same number of inputs and outputs, that the first cross bar has more outputs than inputs, and that the third cross bar has more inputs than outputs. However, it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on Applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). At the time the invention was made it would have been obvious to a person of

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ordinary skill in the art to provide the same number of inputs and outputs at the second cross bar, and different numbers of inputs and outputs, as specified, at the first and third cross bars. One of ordinary skill in the art would have been motivated to do this in order to satisfy a desired implementation.

Allowable Subject Matter

9. Claims 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 19 and 20, the prior art of record fails to disclose some inputs to the third cross bar switch are configured to receive data from the second cross bar switch, and some inputs are configured to receive data from a packet switch.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Nishimoto (US 2001/0024305) Optical Node Device and Signal Switching and Connection Method

- Wang et al. (US 2001/0043770) Method of Mirror Layout of Multi-Level Optical Switch

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11. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is (571) 272-3151. The examiner can normally be reached between 8:30am and 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at (571) 272-3155. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Thomas E. Volper

TEV

November 24, 2004



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